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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,859	08/01/2003	Ik Seo Choi	2336-200	9153

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EXAMINER

OLIVA, CARMELO B

ART UNIT PAPER NUMBER

2831

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/631,859

Applicant(s)

CHOI ET AL.

Examiner

Carmelo Oliva

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/1/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Hatanaka et al. (US 6,229,249).

Regarding claim 1, Hatanaka et al. discloses a ceramic package in Fig. 2 comprising:

a layered structure 1 formed by stacking a plurality of ceramic sheets one atop another, having an internal cavity for housing the component and internal patterns in at least a portion of the ceramic sheets;

a lid 6 mounted on the layered structure above the cavity to maintain the cavity airtight;

outside connection terminals 11,13 formed on outer portions of the layered structure;

internal connection patterns 29,19,20 separately formed horizontally in at least two of the ceramic sheets to be electrically connected with the outside connection terminals; and

inside connection terminals 22 formed within the cavity to be electrically connected with the component and at least a portion of the internal connection patterns.

Regarding claim 2, the separate internal connection patterns are electrically connected through via holes 25.

Regarding claim 3, the internal connection patterns 20,29 are separately formed in adjacent ones of the ceramic sheets.

Regarding claim 4, the internal connection patterns comprise upper internal connection patterns 19 formed adjacent to the lid and lower internal connection patterns 29 connected with the inside connection terminals.

Regarding claim 5, the lower internal connection patterns 29 comprise a first pattern which is formed on a ceramic sheet as that of the inside connection terminals for electric connection therewith, and a second pattern 20 which is connected with the outside connection terminals and formed in a second ceramic sheet different from that of the first pattern.

Regarding claim 6, the upper internal connection patterns 19 comprise a first pattern formed on a layer on which the lid is mounted, and a second pattern (directly

below 19 in Fig. 2) which is connected with the outside connection terminals and formed on a ceramic sheets different from that of the first pattern.

Regarding claim 7, comprising inside patterns for realizing circuit elements in at least one of the ceramic sheets which underlies the lower internal connection patterns (directly below 29 in Fig. 2).

Regarding claim 8. Hatanaka et al. discloses a fabrication method of a ceramic package capable of mounting components within a cavity, the method comprising the steps of:

- preparing a plurality of ceramic sheets 1;

- forming pattern layers 19,20, 29 in at least a portion of the ceramic sheets to realize circuit elements;

- forming outside connection terminals 11,13 for signal interchange with the outside and forming inside connection terminals connected with the components in a portion of the ceramic sheets;

- separately forming internal connection patterns on at least two of the ceramic sheets, for connecting the outside connection terminals with the lid mounted over the cavity or with the inside connection terminals;

- forming conductive via holes 25 in a portion of the ceramic sheets to electrically connect the separate internal connection patterns which are formed in the ceramic sheets; and

- stacking the ceramic sheets one atop another.

Regarding claim 9, the internal connection patterns 20,29 are separately formed adjacent ones of the ceramic sheets.

Regarding claim 10, the internal connection patterns comprise upper internal connection patterns 19 formed adjacent to the lid and second internal connection patterns 20,29 connected with the inside connection terminals.

Regarding claim 11, the lower internal connection patterns 20,29 comprise a first pattern which is formed on a same ceramic sheet as that of the inside connection terminals for electric connection therewith, and a second pattern which is connected with the outside connection terminals and formed in a second ceramic sheet different from that of the first pattern.

Regarding claim 12, the upper internal connection patterns 19 comprise a first pattern formed on a layer on which the lid is mounted, and a second pattern (below 19) which is connected with the outside connection terminals and formed on a ceramic sheet different from that of the first pattern.

Regarding claim 13, inside patterns for realizing circuit elements provided in at least one of the ceramic sheets which underlies the lower internal connection patterns (below 29).

Conclusion


4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Onishi et al. (US 5,459,368), Ikata et al. (US 5,786,738), Shibuya

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et al. (US 6,445,254), and Kinoshita (US 6,734,605) all show multi-layered ceramic packages.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carmelo Oliva whose telephone number is (571)272-1982. The examiner can normally be reached flexible hours on Monday through Friday with every other Wednesday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard, can be reached at (571)272-2800 ext. 31. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.


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